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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,903	08/17/2006	Yuka Fujita	1163-0578PUS1	2326

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EXAMINER	
LAY, MICHELLE K	

ART UNIT	PAPER NUMBER
2628	

NOTIFICATION DATE	DELIVERY MODE
04/26/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/589,903	FUJITA ET AL.	
	Examiner	Art Unit	
	MICHELLE K. LAY	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-10 and 12* is/are rejected.

7)☒ Claim(s) *5 and 11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The amendment filed 02/02/2010 has been entered and made of record. Claims 1-12 are pending.

Response to Arguments

Applicant's arguments filed 02/02/2010 have been fully considered but they are not persuasive. Applicant argues Allizon et al. (EP 1328114) fails to teach or suggest obtaining a correction target region as disclosed in claim 1. Examiner respectfully disagrees. Allizon teaches the output representation can be displayed on a standard-definition television of high-definition television which can comprise several video resolutions (said ***target region***) [0006-0009]. Each layer of Allizon has associated with it a particular spatial resolution (said ***presentation style***), corresponding to one of a standard range of resolutions and a particular transparency [0150-0151]. The layers are combined by the graphics engine (2032) (said ***combining individual monomedia***) [0158]. As shown in Fig. 10, the corresponding transformed layers (6012, 6022, 6032, 6042, 6052) are combined to form the composite output image (6060) based on the resolution of the television (said ***target region***) [0162]. Therefore, Allizon teaches having a target region, where the region is the determined output device and its specified output resolution.

Allowable Subject Matter

Claims **5** and **11** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims **1-4**, **6-10** and **12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Allizon et al. (EP 1328114) in view of Boice et al. (6,097,757).

Allizon teaches the limitations of claims 1-4, 6-10 and 12 with the exception of explicitly teaching interframe differences. However, Boice teaches a method/system for adaptively encoding a sequence of video frames in real-time.

In regards to claim **1**, Allizon teaches a receiver/decoder (said ***image presentation unit***) with means to receive input data with a defined input resolution and means for selecting an output resolution to be applied to an output representation [0009, 0149]. The output representation can be displayed on a standard-definition television of high-definition television which can comprise several video resolutions (said ***target region***) [0006-0009]. Each service broadcast data stream comprises a number of distinct

components, e.g., video component, sub-title component and so on [0102]. There are a number of graphics and video sources produced in hardware. These sources are divided into five image layers (aka "image representation") (said ***plurality of monomedia data***) [0150]. With reference to Fig. 9, the layers include MPEG video layer (6010), background and still layer (6020), cursor layer (6030), graphic layer (6040) and subtitle layer (6050) (said ***plurality of monomedia data***) [0158; Fig. 9]. Each layer has associated with it a particular spatial resolution (said ***presentation style***), corresponding to one of a standard range of resolutions and a particular transparency [0150-0151]. The layers are combined by the graphics engine (2032) (said ***combining individual monomedia***) [0158]. As shown in Fig. 10, the corresponding transformed layers (6012, 6022, 6032, 6042, 6052) are combined to form the composite output image (6060) based on the resolution of the television (said ***target region***) [0162]. The MPEG source layer (6010) corresponds to a single frame of decoded MPEG output and changes every 25th or 30th of a second, depending on the frame rate of the MPEG stream. To give the effect of the other layers being overlaid seamlessly on the decoded MPEG frames, the graphics engine (2032) products an output image every time the MPEG source layer changes (said ***composite video frame; generating video frame carrying out image enhancing***) [0163]. The spatial resolution and transparency of each of the layers can be independently manipulated (said ***presentation style***) [0164]. The graphics engine (2032) (said ***image enhancing unit ... response to scaling/combining***) computes an output image and transforms the five source layers into intermediate images each having the same spatial resolution as the output image

[0164-0166]. The upsizing and downsizing methods make use of interpolation filter in order to create images having different sizes to the original (said ***generating correction data***). An anti-aliasing operation is also applied to the transformed images, but may be switched on or off for each layer [0167].

The method/system of Boice exploits temporal redundancy by dividing the current picture into blocks and then searching in previously transmitted pictures for a nearby block with similar context. Only the difference between the current block pels and the predicted block pels extracted from the referenced picture is actually compressed for transmission and thereafter transmitted (said ***interframe difference***) [c.4 L.28-39].

It would have been obvious to modify the method/system of Allizon to include the adaptive encoding of Boice because the method/system of Boice produces a constant quality, variable bit rate bit stream output [abstract]. The method/system enhances picture quality of an encoded video sequence while still obtaining a high compression rate by providing a real-time, variable bit rate encoding scheme [c.1 L.60-63]. Furthermore, the motion compensation of Boice reduces or even eliminates redundancy between pictures [c.4 L.29-38].

In regards to claim **2**, the graphics engine (2032) (said ***image enhancing unit***) computes an output image by transforming the five source layers into intermediate images each having the same spatial resolution (said ***display attribute***) as the output image (said ***correcting values of a display attribute***) [0152-0153, 0164-0166]. The

upsizing and downsizing methods make use of interpolation filter in order to create images having different sizes to the original (said ***generating correction data***). An anti-aliasing operation is also applied to the transformed images, but may be switched on or off for each layer [0167].

In regards to claim **3**, Allizon teaches that when a display device such as the television set (10000) in connected to the receiver/decoder (2000), a resolution manager (said ***correction region managing unit***) senses the output resolutions that are compatible with the television set (100000) (said ***correction target region***) [0186]. When the video device (3734) senses a change in the resolution of a received and decoded MPEG bit stream, it resizes the MPEG video layer to be the same as the new broadcast resolution (said ***scaling/combining information; correction unit***) [0187]. With reference to Fig. 3, the digital video signal is first compressed using MPEG-2 (said ***compression ratio***) compressor (1010). The compressed signal is then transmitted to the multiplexer and scrambler (1030) in order to be multiplexed with other data, such as other compressed data [0098].

Boice teaches a method/system for adaptively encoding in hardware/software sequence of video frames in real time. Fig. 1 shows a MPEG-2 encoder (11) (said ***compression ratio***). The picture encoding order and the picture transmission order do not necessarily match the picture display order. A buffer stores this input until it is used [c.4 L.59-64]. A delay buffer allows the perceptual activity measurement to be performed on frames of the video sequence prior to their encoding. The results are

weighted and used to assign bit allocation for each frame in order to optimize picture quality [c.6 L.20-25]. With reference to Fig. 5, delay buffer (550) (said ***delaying frame buffer***) provides a delayed video sequence (pixel data) to an encoder (540) (said ***encoding unit***) [c.6 L.47-48]. Boice further teaches a frame delay can be used when so that the previous frame is analyzed while the current frame is being encoded (said ***previous frame decoding unit, current frame decoding unit***) [c.7 L.15-30]. The method/system further exploits temporal redundancy by dividing the current picture into blocks and then searching in previously transmitted pictures for a nearby block with similar context. Only the difference between the current block pels and the predicted block pels extracted from the referenced picture is actually compressed for transmission and thereafter transmitted (said ***correction data generating; interframe difference***) [c.4 L.28-39].

It would have been obvious to modify the method/system of Allizon to include the adaptive encoding of Boice because the method/system of Boice produces a constant quality, variable bit rate bit stream output [abstract]. The method/system enhances picture quality of an encoded video sequence while still obtaining a high compression rate by providing a real-time, variable bit rate encoding scheme [c.1 L.60-63]. Furthermore, the motion compensation of Boice reduces or even eliminates redundancy between pictures [c.4 L.29-38].

In regards to claim **4**, Allizon teaches a receiver/decoder (said ***image presentation unit***) with means to receive input data with a defined input resolution and means for

selecting an output resolution (said ***target***) to be applied to an output representation [0009, 0149]. The graphics engine (2032) (said ***image enhancing unit***) computes an output image by transforming the five source layers into intermediate images each having the same spatial resolution (said ***scaling/combining information***) as the output image (said) [0152-0153, 0164-0166]. The upsizing and downsizing methods make use of interpolation filter in order to create images having different sizes to the original. An anti-aliasing operation is also applied to the transformed images, but may be switched on or off for each layer [0167]. The MPEG source layer (6010) corresponds to a single frame of decoded MPEG output and changes every 25th or 30th of a second, depending on the frame rate of the MPEG stream. To give the effect of the other layers being overlaid seamlessly on the decoded MPEG frames, the graphics engine (2032) products an output image every time the MPEG source layer changes (said ***generating video frame carrying out image enhancing***) [0163].

In regards to claim **6**, Allizon teaches a receiver/decoder, such as a set top box, with means to receive input data with a defined input resolution and means for selecting an output resolution to be applied to an output representation [0009, 0149]. The receiver/decoder is connected to a television (said ***output unit***) comprising multiple output resolutions [0149, 0158-0170, 0186]. The MPEG source layer (6010) corresponds to a single frame of decoded MPEG output and changes every 25th or 30th of a second, depending on the frame rate of the MPEG stream. To give the effect of the other layers being overlaid seamlessly on the decoded MPEG frames, the

graphics engine (2032) products an output image every time the MPEG source layer changes (said ***generating video frame carrying out image enhancing***) [0163].

In regards to claims **7-10** and **12**, claims 7-10 and 12, recites similar limitations as claims 1-4 and 6 respectively but in process form. Therefore, the same rationale used for claims 1-4, and 6 respectively is applied. Furthermore, the system recited in claims 1-4 and 6 executes the process recited in claims 7, 8, 10 and 12.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle K. Lay whose telephone number is (571) 272-7661. The examiner can normally be reached on Monday-Friday 7:30a-5p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee M. Tung can be reached on (571) 272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michelle K. Lay/
Primary Examiner, Art Unit 2628
22 April 2010